USER'S MANUAL

CCTV Tester VA4896 + FIBER OPTIC CABLE

- Thank you for purchasing the CCTV security tester. Please read the manual before using the CCTV tester VA4896, and use properly.
- For using the CCTV tester VA4896 safely, please first read the「Safety Information」carefully in the manual.
- The manual should be kept well in case of reference.
- Keep the S/N label for after-sale service within warranty period.

  Product without S/N label will be charged for repair service.
- If there is any question or problem while using the CCTV tester VA4896, or damages occurred on the product, please contact Technical Department of Your local distributor.

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1. Safety Information

Notice

- The tester is intended to use in compliance with the local rules of the electrical usage and avoid to apply at the places which are inapplicable for the use of electrics such as hospital, gas station etc.
- To prevent the functional decline or failure, the product should not be sprinkled or damped.
- The exposed part of the tester should not be touched by the dust and liquid.
- During transportation and use, it is highly recommended to avoid the violent collision and vibration of the tester, lest damaging components and causing failure.
- **Don't leave the tester alone while charging and recharging. If the battery is found severely hot, the tester should be powered off from the electric source at once. The test should not be charged over 8 hours.**
- Don't use the tester where the humidity is high. Once the tester is damp, power off immediately and move away other cables connected.
- The tester should not be use in the environment with the flammable gas.
- Do not disassembly the instrument since no component inside can be repaired by the user. If the disassembly is necessary indeed, please contact with the technician of our company.
- The instrument should not be used under the environment with strong electromagnetic interference.
- Don't touch the tester with wet hands or waterish things.
- Don't use the detergent to clean and the dry cloth is suggested to use. If the dirt is not easy to remove, the soft cloth with water or neutral detergent can be used., but the cloth should be tweaked sufficiently.

Battery	Built-in 3.7V Lithium polymer battery ,3000mAh
Rechargeable	After charging 3-4 hour, working time lasts 12 hours
Low Consumption	Energy saving technology
General	
Working Temperature	-10℃---+50℃
Working Humidity	30%-90%
Dimension/Weight	176mmx94mmx36mm/340g

6.2 Optical power meter specifications

Measure Range(dBm)	-70～+10dBm
Wavelength(nm)	850nm、1300nm、1310nm、1490nm、1550nm、1625nm
Detector	InGaAs
Uncertainly	±2%
Display Resolution	Linear：0.1% ；Nonlinear：0.01dBm
Operating Temperature(℃)	-10～+50
Storage Temperature (℃)	-20～+70
Linker	FC/PC

The data above is only for reference and any change of them will not be informed in advance. For more detailed technical inquiries, please feel free to call the Technical Department of Your local distributor.

6. Specifications

6.1 General Specifications

MODEL	CCTV Security Tester VA4896
Video Test	
Signal mode	NTSC/PAL (Auto adapt)
Display	3.5 inch digital TFT-LCD ,960 x 240 resolution
LCD adjustment	Brightness, Contrast, Saturation adjustable
Video IN/OUT	1 channel BNC Input & 1 channel Output
Video Output Mode	1.0 Vp-p
Video Level test	
Level test	Video signals measured in IRE or mV
PTZ controller	
Communication	RS232, RS422 simplex and RS485
PTZ Protocol	Compatible with more than 20 protocols such as PELCO-D/P, Samsung, Panasonic, Lilin, Yaan, etc.
Baud Rate	150,300,600,1200,2400,4800,9600,19200bps
Video Signal Generation	
Color bar generation	Output one channel PAL/NTSC colorbar video signal for testing monitor or video cable.
Optical Power Meter	
Wavelength	850, 1300, 1310, 1490, 1550, 1625nm
Measurement	-70~+10dBm
UTP CABLE TEST	
UTP cable test	Test UTP cable connection status and display in the screen. Read the number of the test box.
DC12V 1A power output	
DC12V power output	Output DC12V1A power for camera
Audio input test	
Audio input test	test the pickup and other audio equipments on the front-end
RS485 data analyst	
Data Monitor	Captures and analyzes the command data from controlling device
POWER	
Power Adapter	DC5V, 2A

2. Introduction

The CCTV tester VA4896 is developed for the On-Site installation and maintenance of video monitoring system. It can be used for displaying video, controlling PTZ, generating images, capturing data of RS485 and testing LAN cable etc. Its functions, easy operation, and portability makes it simple for the CCTV technician to install and maintain CCTV system, improving work efficiency and get the labor cost down.

2.1 Features

- 3.5"TFT-LCD , 960（H）×240（V）resolution.
- Video Level testing, video signals measured in IRE or mV
- DC12V 1A power output for camera
- Audio input testing
- Optical power meter, used for optic fiber CCTV monitor system, CATV system, optic fiber communication networks deployment and test.
- PTZ control. Pan/tilts the P/T unit, zooms in/out the lens, adjusts the focus, aperture and sets and calls the preset position
- PTZ continuing rotate test
- Video displaying. Automatically adapts and displays the video format of NTSC/PAL. LCD Brightness/Contrast/Color Saturation are adjustable.
- Video Generating, The PAL/NTSC multi-system colorbar video generator (seven-system switchable, transmit/receive seven-system colorful imagines)
- Data analyst. Captures and analyzes RS485 controlling data to help the technician to find out the problem.
- Cable testing. It is powerful in testing LAN cable, measuring the connecting status ， displaying the sequence of connection and the NO. of the LAN cable.
- Multi-interface and Multi-baud rate. Support RS232 ,RS485 and RS422 interface; baud rate ranging from 150, 600 to 19200bps.
- Multi-protocol. Supports more than twenty PTZ protocols. For example, PELCO-P, PELCO-D, SAMSUNG etc.

- PTZ address scanning, search up the ID of PTZ camera.
- Lithium Ion Polymer Battery (3.7V DC3000mAh). The device employs advanced power control and protection circuit. The device is high power-efficient, energy saving and environmental protection. It can last 12 hours for normal use after charging for 4 hours.

2.2 CCTV tester VA4896 Kits

Professional design, light and portability, video display and data control are deliberately integrated, which makes the instrument so simple, practicable, easy for use that the training is almost unnecessary for an operator to be skillful.

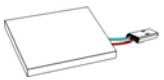
1. CCTV tester VA4896

3. LAN Cable Tester

5. BNC Cable

6. Safety cord

2. Power Supply (5V 2A)



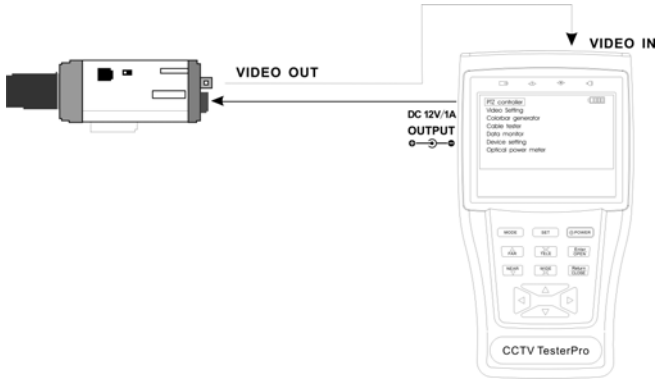
4. Lithium Ion Polymer Battery

7. RS485 data cable

8. Instruction Manual

4. DC12V 1A power output

Power the camera with DC12V(1A) power output from the tester. It is helpful for demo and testing where there is no power supply available.



Notice

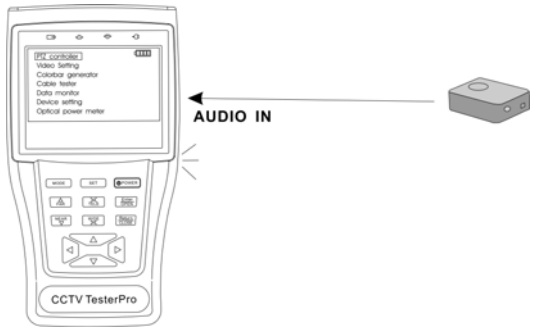
a. Don't input any power into the "DC12/1A OUTPUT" port of the CCTV tester to avoid destroy.

b. Don't output this DC12V/1A power to the power input port of the CCTV tester to avoid destroy.

c. When the requirement of the camera is higher than 1A, the CCTV tester will enter protection mode. Disconnect all the connections of the CCTV tester and then connect the CCTV tester with power adaptor to resume the CCTV tester.

5. Audio input test

Test the audio input from pickup devices. Connect the tester and pickup device with the audio cable.



2) Input the optical fiber to be measured, the power value is displayed in LCD.

3) Linear and nonlinear value of the current optical-fiber power can be displayed by pressing key to change the unit to be mW or dBm.

C. Relative power value (optical link loss) measurement

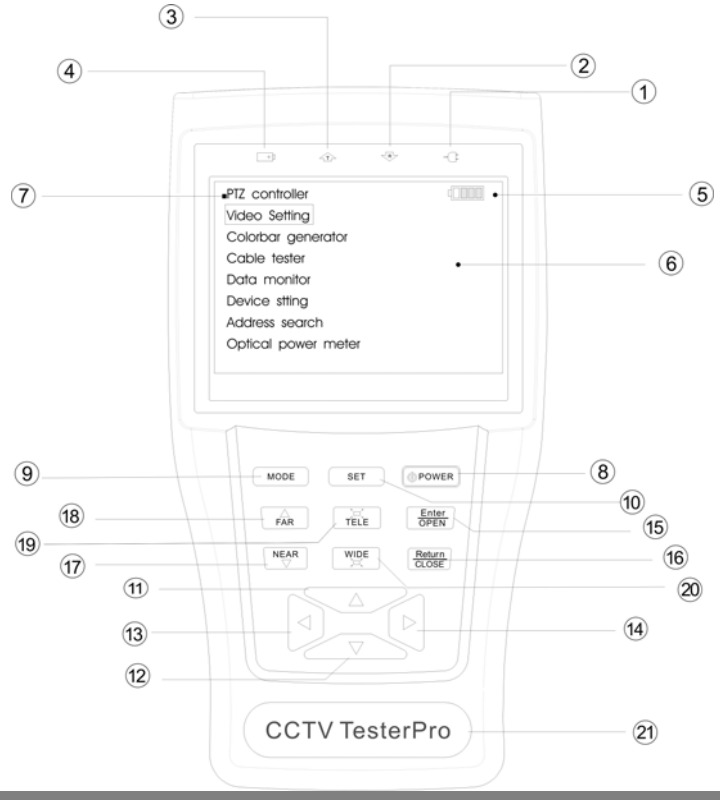
1) Set the wavelength for measurement.

2) Measure the first optical fiber , pressing the

key under any display unit, then the current fiber power value is stored as the base reference value.

3) Input another optical fiber to be measured , the relative power value is displayed. The optical power meter displays the end-end loss of the fiber under test , the unit of loss value must be dB.

2.3 Front Panel



1		The power indicator: it lights green while the tester is powered on.
2		The data-reception indicator: it lights red while the data is being received.
3		The data-transmission indicator: it lights red while the data is being transmitted
4		The charge indicator: it lights red while the battery is being charged. As the charging is complete, the indicator turns off automatically.
5		The display Icon of battery electricity: it displays the electric quantity
6		Main-menu: it shows main functions of CCTV tester VA4896.
7		Sub-menu: Shows and sets the values of functions

8	POWER	Long-pressing it more than 2 seconds to turn on/off the tester; short-pressing to turn on/off the PTZ controller menu displaying.
9	MODE	Menu key: it pops up the main-menu; constant-press it or press the △ or ▽ key can shift between functions
10	SET	Setup key : press it or press left or right key to enter sub-menu to set the parameters of functions.
11	△	Upward : Select the item which will be set or add the value of the parameter. Tilt the PTZ upward.
12	◁	Leftward : Enter the sub-menu or select the parameter whose value will be changed. Reduce the value of the parameter. Pan the PTZ left.
13	▷	Rightward : Enter the sub-menu or select the parameter whose value will be changed. Add the value of the parameter. Pan the PTZ right.
14	▽	Downward : Select the item which will be set or reduce the value of the parameter. Tilt the PTZ downward.
15	ENTER / OPEN	Confirm/Open : Confirm the setting of parameters; open the aperture.
16	RETURN / CLOSE	Return/Close : Return or cancel while setting parameters of the menu; close the aperture
17	NEAR	Near focus: Focus the image nearby.
18	FAR	Far focus: Focus the image faraway.
19	TELE	TELE: zoom in the image
20	WIDE	WIDE: zoom out the image

Press NEAR button, the tester will search up the ID quickly and continuously(from 1 to 256). When the ID is searched, the PTZ camera will pan right. At this time, please press any key to stop searching up. Press TELE manual single-step decreasing button, the tester will search up the ID step by step (from 256 to 1). When the ID is searched, the PTZ camera will stop panning.

Press FAR button , the tester will search up the ID quickly and continuously(from 256 to 1). When the ID is searched, the PTZ camera will pan left. At this time, please press any key to stop searching up. Press WIDE manual single-step incremental button, the tester will search up the ID step by step (from 1 to 256). When the ID is searched, the PTZ camera will stop panning.

Press the direction control button to adjust Speed Dome Camera. Press MODE button to quit from the address-scanning function menu.

3.10 Optical power meter

(1) Function Button:

WIDE : Data hold

CLOSE : Relative measuring

◁ ▷ : Wavelength select

△ ▽ : mW/dBm units select

(2) OPERATING INSTRUCTION

A. Press MODE key to select "Optical power meter"

B. Absolute power value measurement

1) Set the wavelength via ◁ ▷ key, the default wavelength is 1310nm.

c. Press ENTER to save the change or press RETURN key to give up the change.

3.9 PTZ address scanning

Search up the ID of PTZ camera.

Note: Please isolate the PTZ camera with other PTZ cameras before searching up. Otherwise all the PTZ cameras in the same system will pan at the same time.

Press [MODE] keys to "Device setting" menu:

Press [ENTER OPEN] key to confirm after change "Address search:" to "on", which add address scan sub-menu. Press [MODE] to switch the sub-menu as illustrated:

(**Note:** The system returns to "OFF" after shutdown, and the scan sub-menu closes automatically. Set "ON" again for next use.)

Press [SET] key to set: protocol, communication port, communication rate, make them same as the PTZ camera

Press [NEAR] or [FAR] key, the address values is constantly on the rise or decrease.

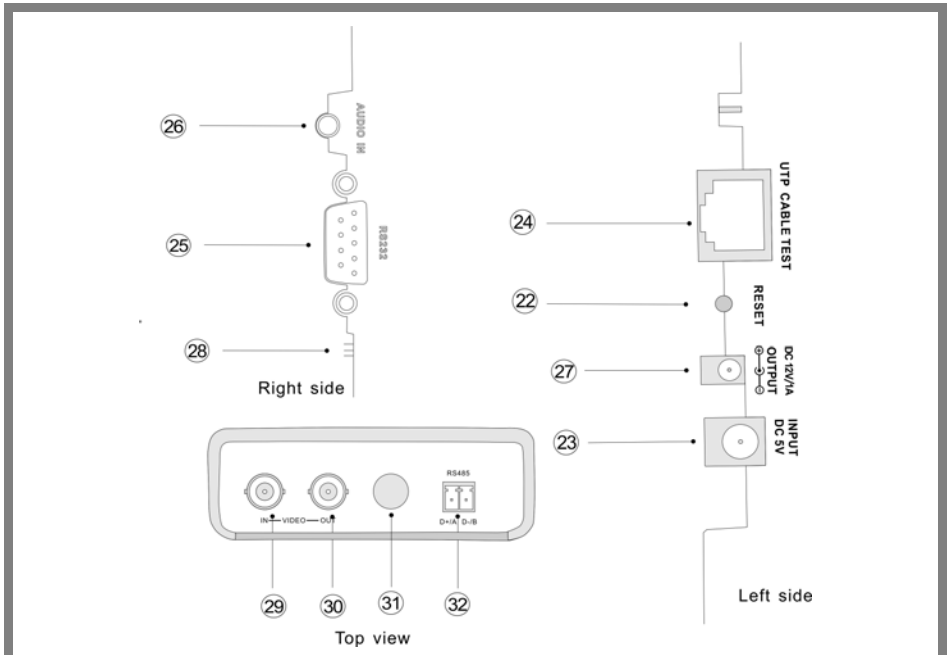
NEAR: The tester will search up the ID quickly and continuously(from 1 to 256). When the ID is searched, the PTZ camera will pan right. At this time, please press any key to stop searching up.

FAR: The tester will search up the ID quickly and continuously(from 256 to 1). When the ID is searched, the PTZ camera will pan left. At this time, please press any key to stop searching up.

WIDE: The tester will search up the ID step by step (from 1 to 256). When the ID is searched, the PTZ camera will stop panning.

FAR: The tester will search up the ID step by step (from 256 to 1). When the ID is searched, the PTZ camera will stop panning.

2.4 Side view



22	Reset the default settings of parameters.
23	External power supply (DC, 5V): It is highly recommended to use the equipped power adapter.
24	UTP cable port: Please use together with UTP LAN cable tester.
25	RS232 interface: RS232 communication for the PTZ.
26	Audio input: test the pickup and other audio equipments on the front-end
27	DC12V1A power output: output DC12V power for camera
28	Tester speaker
29	Video input (BNC input interface): Inputs the video.
30	Video output (BNC output interface): Outputs the video.
31	Optical power meter interface, FC/PC.
32	RS485/422 Interface: RS485/RS422 communication for the PTZ.

2.5 Installing the Battery

The tester has built-in lithium ion polymer rechargeable battery. The battery cable inside battery cabin should be disconnected for safety during transportation!

Prior to the use of the instrument, the battery cables inside the battery cabin should be well connected.

Usually it need not to disconnect the cable at the normal use, pressing POWER key continuously can power on or off the tester.

At the first time of use, the batteries should be completely exhausted and then recharged for 4 or 5 hours.

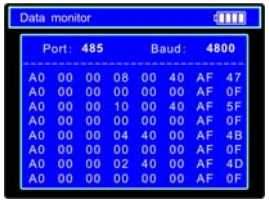
The Charge Indicator lights red when charging the battery, The charge indicator turns off automatically when the charging is completed.

△ Notice: When the Charge Indicator turns off, the battery is approximately 90% charged. The charging time can be extended for about 1 hour and the charging time within 8 hours will not damage the battery.

△ The tester can work as usual while it is being charged, however. But the charging time will be extended.

⚠ Press the RESET key at the right of the instrument to restore the default settings when the instrument works abnormally.

3.7. Data monitor



Capture the command data from RS485 controlling system.

a. Connect the RS485 or RS232 interface of controlling system with the RS485 or RS232 interface of the CCTV tester VA4896 (In case of RS485, A to A, B to B)

b. Press SET key and then press △ or ▽ key to select communication port according to the system connection. Press SET key to save the change.

d. Press △ or ▽ key to select the baud rate according to the baud rate of controlling system and then press SET key to save the change and capture command data from controlling system.

e. Press RETURN key to clear the screen.

3.8 Device setting

Set the parameters of the CCTV tester VA4896

Auto poweroff: Setting the time of auto shut-down.(Disable,5,10,…,60)

Disable: Disable the "Auto poweroff" function. 5 means the CCTV will power off after 5 minutes when there is no any operation.

Keypad tone: Open or close the beep of pressing keypad.

Language: Select language of OSD menu

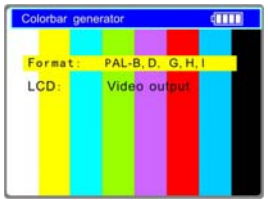
Brightness: Setting the brightness of OSD menu and background.(0~7)

Address search: off / on Open or close the PTZ address search Menu.

a. Press △ or ▽ key to move the parameter we want to change.

b. Press ◁ or ▷ to change the value.

equipment.



a. Press the ▲ or ▼ key to select the parameter which we want to change the value.

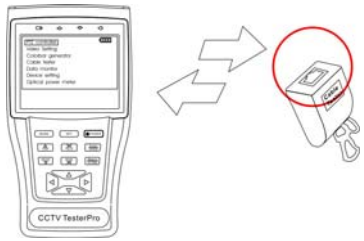
b. Press the ◀ or ▶ key to change the value.

c. Press ENTER key to save the change or press RETURN key to give up the change

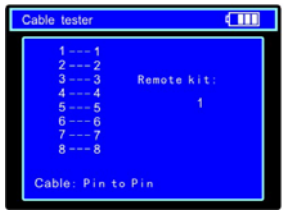
3. 6 Cable Tester

Test LAN cable or telephone cable.

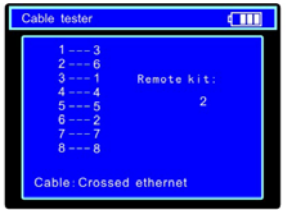
Connect LAN cable or telephone cable with the CCTV tester VA4896 and cable tester. And then the connecting status, cable type and the sequence of wires will be displayed, as well as the serial number of the cable tester kit



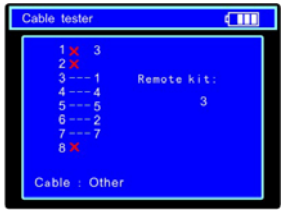
The right picture shows line1-7 are closed, line8 is open and the number of the cable tester box is **255**



Straight-through Line



Cross Line



Open Line or Short Line

3. Operation

3.1 Power on

Continuously press POWER (at least 2 seconds) to power on/off the CCTV tester VA4896. When the CCTV tester VA4896 is powered on，press MODE key the main-menu will pop up.

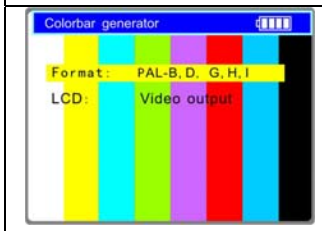
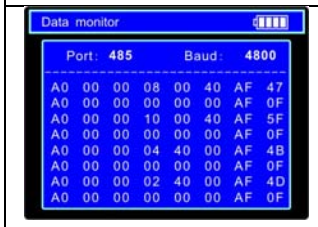
3.2 Menu & Functions

Press MODE key continuously or press the ▲ or ▼ key to select the function (PTZ controller, Video settings, Colorbar generator, LAN cable tester, Data monitors, Device setting) and enter corresponding function setting sub-menu. Press SET key to set the parameters in function sub-menu.

Note: When the CCTV tester VA4896 is powered on, it will return to the function which is being operated before it is turned off.

1. PTZ controller

Display the input video images. Pan/tilt the P/T unit and zoom in/ out the image. Setup the controlling parameters like protocol, communication port, baud rate, PTZ ID, pan/tilt speed; set and call preset position.

	2. Video setting Adjust the LCD brightness, Contrast, Color saturation. Video Format and Video level testing
	**3. Colorbar generator** Output or receive seven different forms of video color bar to tester monitor, cable or other equipment.
	4. Cable tester Test LAN cable or telephone cable. The connecting condition and the sequence of wires will be displayed, as well as the serial number of the cable tester kit.
	**5. Data Monitor** Captures the protocol from the controlling system and display command data. It is helpful to debug and maintain RS485 communication.
	6. Device setting Set the parameters of the CCTV tester VA4896 (Auto power off/ Keypad tone/Language/Brightness/Address search)

stop the rotating.This function is used to test whether the "PTZ rotate" is normal. The PTZ may have problem when rotates to some particular position, like not rotating smoothly or get stuck. The install worker could judge whether the PTZ has problem by observing the PTZ .

3.4. Video Setting

User can customize the brightness, contrast and saturation of the LCD according to the using environment and display the format(PAL/NTSC) of video input.

a. Press the ▲ or ▼ key to select the parameter which we want to change the value.

b. Press the ◀ or ▶ key to change the value. Press ENTER key to save the change or press RETUR key to give up the change

c. The Video Format and Video Level will be displayed in the lower portion of the screen. If there is no video signal at the Video IN port of the CCTV Tester VA4896, the type of NTSC or PAL , and Video Level will not be displayed.

Depending on the type of camera connected to the CCTV tester VA4896, the Video "Format: " will automatically change between NTSC and PAL, and the Video Level will automatically change between IRE (Institute of Radio Engineers) and mV. NTSC signals measured in IRE units, PAL signals measured in mV.

The Video Level should be within the indicated range. Levels that are too low will result in a dim picture with reduced dynamic range. A Video Level that is too high will result in washed out pictures with decreased. The CCTV tester VA4896 will display "Normal" when video levels are 1000mV±20%, "Exceed" or "Weak" will be displayed when video level out of 1000mV± 20%.

3.5. Colorbar generator (Output video at any mode)

Output or receive seven different forms of video color bar to test monitor, video cable or other

OSD Menu of Dome (For reference only)

MAIN MENU	MAIN MENU
1. DISPLAY SETUP	1. Display configuration
2. CAMERA SETUP	2. Set camera parameters.
3. CONTROL SETUP	3. Set PTZ controlling
4. CAMERA MASK SET	4. Set privacy mask
5. PROGRAM	5. Set auto-running functions
6. PAL CAMERA	6. PAL/NTSC Switch
7. CAM DEFAULT SET	7. Restore the default settings
8. DOME RESET	8. Reset the dome
9. EXIT	9. Exit the main menu

■ **Operate auto-running functions by calling preset position(effective for some brands of PTZ camera)**

Call preset-33—Open Auto-flip function

Call preset-34—Reset zero point of PTZ camera

Call preset-64—Enter the main menu of the PTZ camera

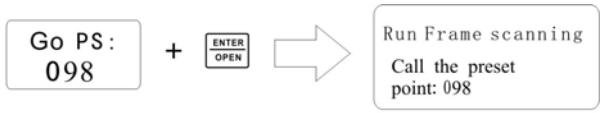
Call preset-95—Enter the main menu of the PTZ camera or stop the PATTERN recording.

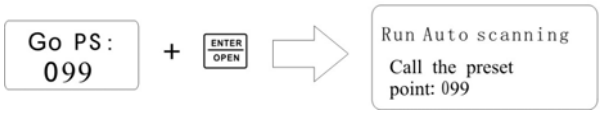
Call preset-96—Run pattern-1

Call preset-97—Run preset tour-1

Call preset-98—Run frame Scan

Call preset-99—Run Auto scan





PTZ continuing rotate test

PTZ continuing rotate test is used to test whether the "PTZ rotate" is normal. Press and hold the direction key (e.g. ◁ or ▷). The PTZ start rotating. Press the "power" key one time, then release the direction key. PTZ will rotate continuously. Press any direction key afterwards will

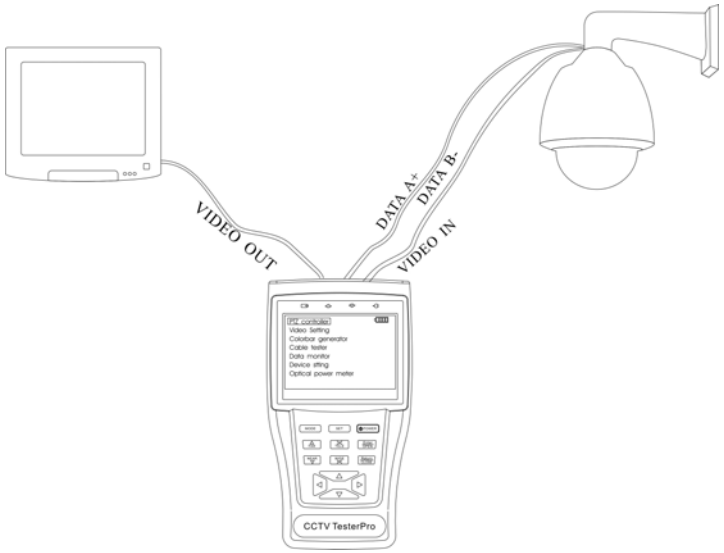
	7. Address search Search the ID of PTZ camera
	8. Optical power meter The Fiber Optical Power Meter to measure the power of Video Fiber Optic Transmission equipment, and testing the Fiber Optic Patch Cord , etc.

3.3 PTZ Controller

Display the input video images. Pan/tilt the P/T unit and zoom in/ out the image. Setup the controlling parameters like protocol, communication port, baud rate, PTZ ID, pan/tilt speed; set and call preset position.

The following connections should be confirmed before use
a. The Video In interface of the CCTV tester VA4896 and the output interface of camera
b. Data A+ of the CCTV tester VA4896 and A+ of the PTZ camera or controlling device, data B- of the instrument and B- of the PTZ camera or controlling device

Note: Don't connect communications interface with a circuit the voltage higher than 6V.



a. Press SET key to enter the sub-menu of PTZ controller.

b. Press the ▲ or ▼ key to select the parameter which we want to change the value.

c. Press ENTER key to save the change or press RETURN key to give up the change

d. Press SET key to exit the sub-menu.

e. Press POWER key to full-screen the image

A. Protocol: Select the protocol according to the protocol of the PTZ camera. Up to 21 popular protocols are available, like elco P, Pelco D, Samsung, Yaan, LiLin, CSR600 etc.

B. Port: Select the communication port for the PTZ camera controlling (RS232/422/485)

C. Baud: Select the baudrate according to baudrate of the PTZ camera.(150, 300, … , 19200bps)

D. Address: Set the ID according the ID of PTZ camera (0~254).

E. Pan Speed: Set the pan speed of PTZ camera (0~63)

F. TiltSpeed: Set the tilt speed of PTZ camera (0~63)

G. Set PS: Setup preset position (0~128)

a. P/T/Z the camera to desired position

b. Press SET key to enter PTZ controller submenu

c. Move the yellow cursor to "Set PS" and then press ◁ or ▷ key to select the preset position number.

d. Press ENTER key to complete preset position setting or preset RETURN key to give up preset position setting.

Tips: Press ▷ or ◁ key to accelerate the value changing.

H. Go PS: Call the preset position. (0~128) The PTZ camera will go to the desired preset position.

a. Move the yellow cursor to "Go PS" and then press ◁ or ▷ key to select the preset position number.

b. Press ENTER key to complete preset position calling or preset RETURN key to give up preset position calling.

Tips: Press ▷ or ◁ key to accelerate the value changing.

The way of calling the OSD menu and preset of the PTZ camera may vary with control systems from different manufacturers. Please read the operation manual of control system manufacturer for details. The way of calling OSD provided for reference is calling preset-64.

a. Move the yellow cursor to "PTZ controller" to enter PTZ controller mode

b. Press SET key to enter PTZ controller sub-menu. Press ▲ or ▼ key to move the yellow cursor to "Go PS",

c. Press ◁ or ▷ key to select the preset number 64, and then press ENTER key to call OSD menu of the PTZ controller.